

A COMPARATIVE ANALYSIS OF AGILE METHODS FOR CORE BANKING SOFTWARE: XP VERSUS DSDM

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ABSTRACT

Today's dynamic environment influences the software development. Due to this dynamic environment, the software also needs to adapt the changes to cope up with the rapidly changing environment. Agile software development methodologies are used to cope up with such a dynamic environment. This research paper helps in understanding the agile methods that are XP & DSDM and a comparative analysis between XP & DSDM. It also focuses on the similarities & difference between these two methods. Finally a method is recommended for the core banking software development in a better way on the basis of selection criteria. This will help to find out the better methodology to help future developers to get new ideas.

KEYWORDS: Agile, DSDM, XP & Core banking software

Received: Apr 07, 2019; **Accepted:** Apr 27, 2019; **Published:** May 07, 2019; **Paper Id.:** IJCMSJUN20199

INTRODUCTION

Today's environment of software development requires a flexible methodology due to its dynamic behaviour. The traditional software development methodologies have no ability to fulfil the dynamic requirement of customers due to lack of flexibility. In the traditional methodology, whole completion of software takes place at one time and most of the time is wasted in the documentation phase. In this approach developer can't move to the next phase, until the previous phase is completed and almost one third of the time & resources are spent in the testing [1] & this extends the delivery of the desired software to the customer. Now a day's when software plays a vital role in every industry. Due to this vast use of software in every industry, software development as well as maintenance is mandatory for development of software we need an accurate, fast and flexible methodology which adapts the changes according to the dynamic scenario.

Converse to the traditional methodology the agile methodology works better with the dynamic environment. Agile means moving swiftly. It is an incremental approach for developing projects with strong focus and customer involvement [2]. Agile method was developed to solve the issues like changing requirements and involvement of customers as well. From 2001 when agile came in lime light it gives satisfaction with the basic rule as "Individuals and interactions, customer collaboration and responding to change" [3]. The XP & DSDM are two different approaches of agile for software development, both of them having the different ways to analyse the project and both of them have their own pros and cons regarding any targeted software. The selection of the better one depends upon the selection criteria of the core banking software.

Core banking software plays a very important role in the banking industry. It is also influenced with dynamic environment as well as the requirement of the customer. CORE stands for “Centralized Online Real Time Environment”, which is used by the banks to perform different operations like Loans, Deposits, and Withdrawals etc. basically means there are centralised data from where all the branches access their relevant data. Core banking software must be user friendly so that user can easily do their operation. If the design is complex then user may definitely face some trouble while using it. So, it is must that it should be user friendly. The second thing is ready to adapt the changes according to the environment as well as user. Due to emerging technology, there is a necessity to alter the software according to the need. Client also required new features according to their increasing needs then also there is need to alter the software with the new requirements, so these two are the selection criteria, according to which the most suitable agile model is selected. But, if in any case the selection criteria will be changed then the suitable model may also get changed, means directly it is said that the selection of most suitable software development model vary on the basis of required software parameters.

This article provides an overview of both XP and DSDM approaches and selection of the better one for the core banking software on the basis of selection criteria.

RESEARCH METHODOLOGY

The data gathered from the literature review as well as from the survey. A survey was conducted to find different engineering practices and for that questionnaire was prepared and sends to different IT companies. For the review, different research papers are collected that are relevant to the agile methodologies and from them the extraction of required information is done.

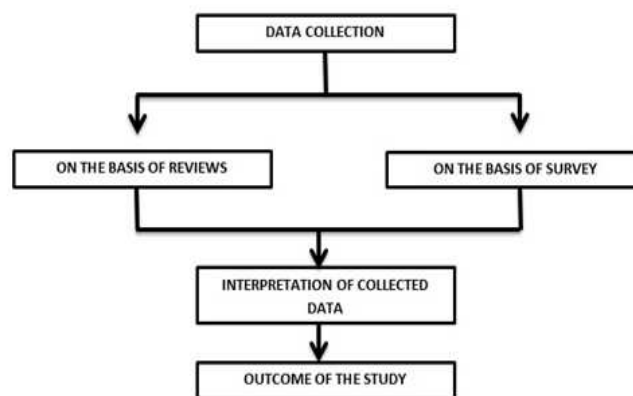


Figure 1

Extreme Programming

The initially extreme programming approach was introduced by Kent Beck. It is a lightweight methodology and it is a simple development model that effectively handles the frequently changing requirements of the customer. It always emphasize on the engineering practice that always help to develop a quality product. Quality is a parameter that is required by the software for its best performance.

The main concept of the XP is pair programming. Pair programming is the base for the XP developer team. It refers to a pair of developers working together on a single work station where everyone is responsible for their unique task in the development. Means one is responsible for coding then other one is responsible for observing that code line by line

as it is typed in and suggest improvements if any required [4]. Due to this individual allotment of tasks a strong communication is always needed in between the team members. But the occurrence of any bug is negligible and this gives the quality to the product.

The development process follows adaptive and incremental procedure. During this, first of all user requirements are collected. On the basis of collected information the whole development process is divided into small number of cycles or iterations. After the division, the next phase is the planning of each iteration in which the requirements are prioritize and the time period as well as the amount of effort is estimated. New requirement may also come during the development process and whenever the requirements is come then the required iteration should be adjusted according to that. In the next phase testing will take place for the bugs. Whenever any bug is detected, then it will be eliminated in the next iteration.

DSDM

Initially dynamic system development methodology was presented by Stapleton [5]. This is a frame work for the management of agile project as well as quick delivery of required product. The DSDM works on Moscow rule for the prioritizing the user requirements for the fast and smooth delivery Moscow rule is a technique used for prioritizing requirements which are assigned on the basis of must have, should have, could have, want to have but will not have this time [6]. There are two studies that compulsory for the development of any required software according to DSDM and the first one is Feasibility Study, another one is Business Study, whenever a project is developed through DSDM, then the feasibility study and the business study done sequentially. In feasibility study the actual problem is defined as well as the estimation of cost is also done that is required in the whole development process. The main output of this phase is feasibility report and development framework. A fast prototype, to make the decision whether to proceed to the next phase or not, can be made [7].

Business and technology analysis is conducted in the business study. The result of business study is system framework, definition and the development plan which include many things like testing strategy and management plan etc.

This methodology is less suitable for the projects that have well defined requirements but it is most suitable for those projects whose requirements are very frequently changing and this also not suitable for those projects which are real time. The whole development process is divided into iterations and the length of the iteration always varies because it depends on the size of the project.

Characteristics of Both Agile Models

Characteristics of both XP and DSDM methodologies are tabulated. This tabulated data has been fetched from the literature review of relevant field. This will help to understand the characteristics of these two methodologies.

Table 1

Characteristic	XP	DSDM
Approach	Iterative, Incremental	Iterative
Iteration time period	Small iteration period	Depends Upon Project Size
Involvement of user	Highly involved	Involvement after frequent release
Documentation	Only basic documentation work is needed	Little bit heavy documentation is needed

Evaluation of Both Agile Models

Both of these methods under study were analysed in details and different engineering fields were identified and based on these engineering fields both of these agile methods were evaluated (Table 2). Hence it is possible to find out whether the engineering field is unique to specific agile method or not. This tabulated data has been fetched from the survey that is conducted in different IT companies. Table below lists the engineering fields of both agile methods under study. “Y” indicates that particular engineering fields are being used in that particular agile methods where as “N” indicated that particular engineering fields are not being used in that particular agile methods.

Table 2

Engineering Practices	XP	DSDM
Small Iteration (1-4 weeks)	Y	N
Feasibility Study	N	Y
Business Study	N	Y
Pair Programming	Y	N
Simple Design	Y	N
Small Releases	Y	N

Comparison for Core Banking on the Basis of Selection Criteria

In this study, for the comparative analysis of both two agile models, there are two parameters of core banking software will be taken for the selection of better one. The first parameter is “User friendliness,” means core banking software must be user friendly and for this the design should be simple and easy to use. According to the table 2 which holds the data that is collected through the survey. The simple design would be supported by the XP not by DSDM. So, for the first parameter XP is more suitable rather than DSDM. Now the second parameter which is the adaptability for the change. Whenever any improvement or modification is required in between the developmental process then this will not supported by DSDM because DSDM is most suitable for the projects that have well defined requirements rather than that project which need frequent changes. So, this parameter also favours XP as suitable development model rather than DSDM. XP is iterative incremental model in which small iteration were released to achieve the goal. After the iteration the feedback is required to ensure about the development. If there is any issue then at that time the required modification will be done for that. There is no need to freeze the whole process. Due to small team the communication gap is negligible and this is the best part of this development model. Due to Continuous flow of communication the required change will be reflect in the development process as soon as possible.

CONCLUSIONS

On the basis of selected parameters of core banking XP is more suitable development method as compare to DSDM because XP provides the simple design that is user friendly and also it supports the adaptive nature to modify the software in between the development process without freezing the whole process. If the parameter will be changed then according to them software development methodology could also be changed. The selected model always depends upon the project and its requirement.

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